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THE ROCKY MOUNTAIN ARSENAL NATIONAL WILDLIFE REFUGE: ON A ROCKY ROAD TO CREATING A COMMUNITY ASSET

RACHAEL E. SALCIDO**

I. INTRODUCTION

The Rocky Mountain Arsenal National Wildlife Refuge (RMA Refuge) is located 10 miles northeast of downtown Denver, Colorado. It is home to deer, badgers, prairie dogs, bald eagles, hawks and bison. According to the parties working to transform the arsenal from a Superfund site to a cherished community asset: "[t]he vision for the Rocky Mountain Arsenal is to create perhaps the most unique national wildlife refuge in the country." [1] One aspect is certainly different than other refuges around the nation:

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* Professor of Law, Pacific McGeorge School of Law. I would like to thank the organizers of Study Space III, and fellow participants. I would also like to thank Pacific McGeorge and Associate Dean for Faculty Scholarship Thom Main for funding my participation in Study Space III. The experience was transformative. My gratitude also goes to the library staff at Pacific McGeorge, and among others, Dana Botello, Class of 2011, who provided superb research assistance and inspiration.

[1] Milestones, The Evolution of the Rocky Mountain Arsenal, brochure containing information contributed by the U.S. Army, Shell Oil Company and several government agencies. Distributed Dec. 2008.

the RMA Refuge will be a wildlife refuge surrounded by urban development.[2] Residential developments define the border of the RMA Refuge to the north, south and west.[3] Its well-established neighbors include Commerce City and Brighton to the north, the community of Montbello to the south, and the Denver International Airport on the east perimeter.[4]

The other unique aspect is that the RMA Refuge is one of only a handful of national wildlife refuges that was previously used as a military installation.[5] In the 40s and 50s the site was a chemical weapons factory for the U.S. Army, and later was leased to companies that produced potent commercial pesticides. As a prior site of military activities—specifically, the production of deadly chemical weapons—a veil of secrecy lies over the activities conducted there in the past. It is such a heavy veil that despite significant litigation and ongoing pressure from the community, it continues to persist. Nonetheless, some facts are undisputed. The RMA Refuge site was heavily contaminated with toxic chemicals that threatened the health of humans and wildlife. Indeed, a small area of the refuge will be the home of contained waste material cleared from other portions of the site and disposed of in double and triple lined landfills. The U.S. Army will continue to own that land in perpetuity.[6] Even after billions are spent to remediate the site, contaminated soils are predicted to pollute the underlying groundwater for hundreds of years.[7]

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[2] Judith Kohler, *Rocky Mountain Arsenal Gets $7.4M Wildlife Center,* ASPEN TIMES (June 20, 2009), http://www.aspentimes.com/article/20090620/NEWS/906199953&parentprofile=search) (noting that the refuge will be at the center of a big urban area).

[3] Rocky Mountain Arsenal Public Outreach, 2008 Community Improvement Plan for Rocky Mountain Arsenal Contamination Cleanup (2008).

[4] Tom Noel, *Once Deadly Arsenal Now a Prairie Oasis,* DENVER ROCKY MOUNTAIN NEWS, Mar. 3, 2007 (one reporter described the arsenal as "an island of nature surrounded by a sea of development.").

[5] The others include the Johnston Atoll in the Pacific Ocean, and Rocky Flats National Wildlife Refuge. Neither are open for public access. The Fish and Wildlife Service maintains websites for both refuges. For further information, *see* www.fws.gov/refuge/johnston_atoll/ and www.fws.gov/refuge/Rocky_Flats/.

[6] Rocky Mountain Arsenal National Wildlife Refuse Act of 1992, Pub. L. No. 102-402 Sec.2 (c)(1) (1992) ("The Secretary of the Army shall retain jurisdiction, authority, and control over all real property at the arsenal to be used for water treatment; the treatment, storage, or disposal of hazardous substances, pollutants, or contaminants; or other purposes related to response action at the Arsenal…"). In addition, the Secretary of the Army is required to consult with the Secretary of the Interior to ensure that the "real property retained under this paragraph" is identified, managed and otherwise used in a way that is consistent with the purposes of the refuge to the extent "practicable." *Id*.

[7] The Natural Resource Damage Assessment, prepared by the Colorado Department of Public Health, emphasizes this shortcoming of the remedial work, noting that the Record of Decision (ROD) only required excavation to a

The organizers of Study Space III were aware of how unique and important the RMA Refuge is to the history and development of the Denver region.[8] During our stay in Denver, the participants in Study Space were given a tour of the RMA Refuge that included two parts: the ongoing cleanup activities with immense areas of dredged soil and landfills, and the sections open to the public with prairie dog habitat, clear lakes, dusty fine grass prairie, and bison. The RMA Refuge's future is markedly at odds with its past legacy of environmental degradation. This dramatic contrast provides a unique window into the increasingly dominant impulse—frequently in the context of mitigating the impacts of urban development—to focus on restoration and creation of "faux nature" as a substitute for environmental conservation. This paper examines the RMA Refuge restoration in terms of key benchmarks of successful restorations: 1) biological integrity; 2) historical fidelity; 3) identifying root causes of and addressing practices leading to environmental degradation; and finally, 4) public engagement, connecting with the public and encouraging environmentalism. Restoration is a choice among a variety of land use options, and I emphasize the need for community acceptance and involvement because the element of choice is often subsumed by conflicts over historic conditions and what is natural. My thesis is that the restoration will become a community asset only if the lessons of the past are taught side by side with the ecological success of restoration at the site.

While I conclude that in several areas the restoration is achieving identified objectives, the areas where the RMA Refuge restoration falls short of those benchmarks provide opportunities for refining expectations regarding restorations in general. The RMA Refuge is a work-in-progress, yet it has already produced lessons for managing public response to restoration projects and how image control can thwart public support. As succinctly stated by the Remediation Venture Office (RVO)[9]: "[r]eturning the Arsenal to a community asset requires a comprehensive effort."[10]

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depth of 5 feet in some areas and 10 feet in others. Press Release, Colo. Dep'ts of L. & Pub. Health & Env't, The Natural Resource Damage Assessment, (Oct. 29, 2007) at 3-22 (citing specifically to South Plants Central Processing Area and Former Basin F). The reduction in amount of NRD ultimately reached by the settlement indicates that the plume may be shrinking at a faster rate than anticipated.

[8] *Study Space III: Private and Public Lands in the Post-Colonial North American West* took place in December 2008. *Study Space III* was a project of LatCrit and the Georgia State University College of Law Center for the Comparative Study of Metropolitan Growth. Study Space provided a unique opportunity for participants to engage in deep reflection on place and history within a diverse group of scholars.

[9] The RVO refers to the partnership between Shell, the US Army and Fish and Wildlife to transform the site into a wildlife refuge.

[10] Milestones, The Evolution of the Rocky Mountain Arsenal, brochure

More than in a physical sense, the return requires a shift in mindset and acceptance by the community. A community that has been alternatively deceived, shut out of decision-making and had its concerns marginalized; a community that continues to express skepticism, fear, and hope for the future all at once. By communicating both the successes of the RMA Refuge restoration and the short-sighted mistakes and past failures to protect the environment, a more precautionary approach to using environmental restoration efforts as mitigation of the impacts of urban development can be encouraged. Simply burying the past and marketing the fabulous new open space gives only a pyrrhic victory to those seizing on restoration as the new path to environmental protection.

II. HISTORY OF THE RMA REFUGE AND ITS CONVERSION TO A COMMUNITY ASSET

A. Background – History of the Region and the Rocky Mountain Arsenal.

1. The Denver Region.

The vast holdings of federal public lands, and thus the influence of the federal government on the patterns of land use and economic development, are critical to understanding the politics of the West.[11] Some have expressed the view that the federal government is akin to a colonizing power in the region, seeking to maximize the extraction of natural resources from a colony to serve the conquering empire. While this is not a perfect analogy, it is helpful to understanding the sense of occupation expressed by Coloradans, Denver being the location of two military installations generating dangerous wastes, Rocky Mountain Arsenal and Rocky Mountain Flats.[12] Consider that, when the military was looking for a site to produce deadly weapons, a location far from either coast to guard from attack and one far from large population centers was desirable. Denver fit that bill.

Denver is in many ways an artificial City—it is not located in a climate that is hospitable to agriculture, it is far from abundant

containing information contributed by the U.S. Army, Shell Oil Company and several government agencies. Distributed Dec. 2008.

[11] Much as the City Beautiful movement is the result of the new progressives, their influence was significant in changing the policy of disposing of federal lands for a retention policy that retained lands in public ownership. The west, where much of the land was challenging to cultivate, bears the legacy of this shift in policy promoted by the new progressives. See generally, GEORGE CAMERON COGGINS, ET AL, FEDERAL PUBLIC LANDS AND RESOURCES LAW. 78-80 (5th ed., 2002) (discussing homesteading).

[12] Rocky Flats was the site of nuclear weapons production. As previously noted, it has also become a National Wildlife Refuge.

water sources, either for municipal uses or for transporting commerce. Instead, Denver became a destination because of determined entrepreneurs, who importantly ensured the landlocked town had a rail connection and national bank.[13] Today, Denver is an urban archipelago, attracting new residents with its city amenities and natural beauty.[14] Denver-area growth is substantial, registering in the 2009 U.S. census as 25th among the most rapidly growing cities with populations over 100,000.[15]

The urbanization of Denver involved the "City Beautiful" movement which influenced the development of many U.S. cities. Among the goals of world-class buildings and art that would attract new residents and international acclaim, Denver's Mayor Speer promoted a goal of including ample public recreational spaces.[16] The City was designed with wide parkways lined with trees and central parks that persist today. However, the development of Denver into a "beautiful" city with lush green parkland required replacement of indigenous plant and animal species that were at home on the arid plains.[17] Changing the existing ecosystem processes was part of the transformation, as was the introduction of exotic plants and grasses to meet the contemporary vision of parks inspired by Frederick Law Olmstead.

In Denver, as elsewhere in the U.S., the term "park" evokes the image of lush greenery, notwithstanding the climate of Colorado. Indigenous plant species may not be the most appealing to Denver residents with a different image of beautiful nature. For example, when the City recently began transforming various local parks into native grass and plant life, some citizens complained about the "weeds" invading their parks and the lack of maintenance.[18] To these citizens, wild grasses belonged outside the borders of urbanized Denver.

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[13] KATHLEEN A. BROSNAN, UNITING MOUNTAIN AND PLAIN 10-38 (2002) (detailing the rise of Denver through the efforts of entrepreneurs such as John Evans, William Byers, Chaffee, Moffat, Porter).

[14] James R. Rasband, *The Rise of Urban Archipelagoes in the American West: A New Reservation Policy?* 31 ENVTL. L. 1 (2001) (discussing the shifting preference for preservation of natural resources as urban west populations expand).

[15] U.S. Census News Release, July 1, 2009, Table 1: Population Estimates for the 25 Fastest Growing U.S. Cities with Populations over 100,000 in 2008, available at www.census.gov/newsroom/releases/xls/cb09-99_Table1.xls (last visited 12-20-13).

[16] STEPHEN J. LEONARD & THOMAS J. NOEL, DENVER: MINING CAMP TO METROPOLIS 140-149 (1990). Lead by Spear, Denver park acreage was doubled from 1904 to 1912. *Id.* at 145.

[17] This process was undertaken in many parts of the west, and some have lamented how little we have studied the changes in the environment. In a discussion specific to ranching in the west see DONALD WORSTER, UNDER WESTERN SKIES: NATURE AND HISTORY IN THE AMERICAN WEST 45 (1992).

[18] Peter Zoschg, City of Denver Arborist, Presentation to Study Space III Participants, Denver, CO (Dec. 2, 2008).

It is thus ironic that the military base imposed on Denver is now the largest open space in the metropolitan area.[19] By sheer accident, much of the buffer areas surrounding the central operations of the base were a de facto refuge for native species of plants and wildlife. The serendipity of discovering bald eagles roosting at the site will mean continued federal ownership of uninhabited land in an area otherwise experiencing significant urbanization. The likelihood of maintaining this area as open space, absent the extreme contamination of the site seems rather remote.[20] Thus, in some sense, the federal government is again deciding what is best for Denver and the nation—a National Wildlife Refuge—rather than extended residential or commercial development. While Denver struggles to adopt density requirements, enhance transportation options for more sustainable patterns of living, and the like,[21] thousands of acres of wildlife habitat has been re-constructed a short distance from downtown. This is the ultimate wildland-urban border created in reverse by the introduction of wildland rather than urbanization.

Denver residents are no strangers to wildland-urban border issues. In fact, Denver has in recent years hired a wildlife ecologist because it is faced with such recurring interface issues. Among other responsibilities the City wildlife ecologist acts as liaison with the public. The wildlife ecologist educates the public so that species that perceive the developed areas of the City as supportive habitat can live in harmony with people.[22] It is a most challenging job. For example, coyotes have become well established in various neighborhoods in southeast Denver, such as Greenwood Village

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[19] Jeremy P. Meyer, *Evicted By War, Restored By Peace*, DENVER POST, Oct. 22, 2006, at C1, *available at* http://www.denverpost.com/ci_4531146.

[20] The NRD settlement is being hailed as an important victory because it will enable the state to preserve lands surrounding the arsenal. A press release states that "the settlements will allow for the protection of threatened land parcels in areas around the Arsenal before they are forever lost to development." Press Release, Colorado Attorney General, Colorado Settles Rocky Mountain Arsenal Suit (May 29, 2008), http://www.coloradoattorneygeneral.gov/press/news/2008/05/29/colorado_settles_rocky_mountain_arsenal_suit.

[21] Denver Mayor Hickenlooper has initiated a plan for sustainable development. *See* Federico Cheever, Edward Ziegler and James Van Hemert, Op-Ed., *What Will It Take For a Really Green Denver?* DENVER POST, July 30, 2006, at E1, available at http://www.denverpost.com/perspective/ci_4104578. The authors note that "For Denver's initiative to be more than symbolic, Greenprint will have to address Denver's contribution to regional sprawl and the environmental damage it causes." *Id.*

[22] Ashley Dulop, City of Denver Wildlife Ecologist, Presentation to Study Space III Participants, Denver, CO (Dec. 2, 2008). *See also* Christopher N. Osher, *Denver Urges "Hazing" of Urban Coyotes*, DENVER POST, Feb. 26, 2009, at B3, *available at* http://www.denverpost.com/breakingnews/ci_11783558 (citing Dulop as urging the "hazing" or frightening away coyotes, who have adopted to suburban living and may provide benefits such as rodent control).

and Broomfield.[23] A coyote exterminator was hired to kill aggressive individual coyotes that threaten people or pets, but citizens sympathetic to the animals sought to thwart his efforts.[24] It should come as little surprise that some people may have trouble embracing the introduction of a wildland border. The fact that the refuge is touted as an excellent recreational and educational experience downplays this fact and emphasizes the restoration as less natural or wild and more managed for people to safely enjoy its presence.

2. A Nutshell History of the Rocky Mountain Arsenal.

The first inhabitants of the area were Native Americans.[25] They too impacted the natural habitat, though often in subtle ways. They were removed from the plains so that agriculture could be expanded by luring eastern farmers to Denver.[26] But the Native Americans' presence as an important part of the history of the site will be memorialized. As part of the restoration, the site will contain a re-creation of a traditional Native American tepee and interpretational material provided to guests to understand the placed artifacts.

By the 1880s, the area was farmland. The Egli farm was one of several that occupied the site. The Egli farmhouse, although put to different uses throughout these past decades, still stands where it was built. It too will constitute a historical marker and tether to the past.

In 1942, the U.S. Army obtained much of the land comprising the arsenal by eminent domain. Condemnation hearings held on June 15, 1942, resulted in 20,000 acres of farmland being seized for the operation of the arsenal. The U.S. Army began to manufacture chemical weapons, including mustard gas, Lewisite, and chlorine gas. Initially, the arsenal was hastily constructed to catch up with Germany's chemical weapons program and to serve as a deterrent. The napalm bombs dropped by U.S. forces on Japan

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[23] *Id.*

[24] Ann Schrader, *Greenwood Village Makes First Coyote Kill,* DENVER POST, Feb. 24, 2009, *available at* http://www.denverpost.com/breakingnews/ci_11773393; Tom McGhee, *Critics Could Block Efforts to Kill Bad Coyotes in Greenwood Village,* DENVER POST, Mar. 31, 2009, *available at* http://www.denverpost.com/breakingnews/ci_12033409*; see also* Michael Davidson, *Coyote Issues Persist After Broomfield Kills Pack,* DENVER POST, June 4, 2009, *available at* http://www.denverpost.com/breakingnews/ci_12518914.

[25] The Native Americans that lived in the region that became Colorado included the Utes, Cheyenne and Arapaho Indians. KATHLEEN A. BROSNAN, UNITING MOUNTAIN AND PLAIN 39 (2002).

[26] *Id. See also* Rocky Mountain Arsenal Site History, http://www.rma.army.mil/site/sitefrm.html (last visited July 22, 2009).

on March 9 and 10, 1945, were produced at the Rocky Mountain Arsenal. In addition to providing weapons during World War II the arsenal also contributed to the cold war arms race.[27] The Army later leased parts of the site to Shell Chemical Company, a division of Shell Oil Company, in 1952, which produced herbicides and insecticides there.

The Army discontinued its production of chemical weapons in 1969, but Shell continued manufacturing there until 1982. While shifting from wartime use to peacetime industrial use, the arsenal still manufactured products intended to be toxic. These many activities left the arsenal heavily contaminated with wartime manufacturing by-products as well as pesticide product and by-product residues. The pollution spread from the site, and impacted neighboring farms. Litigation over property damage and health impacts predates the decision to transform the site into wildlife habitat. Initially, the discovery of pollution impacting the neighboring communities was also dealt with politically as the leaders of Denver sought resolution from the federal government.

In 1984 the Army began to investigate the extent of the contamination, and as a result the site was placed on the National Priorities List (NPL) in 1987. The NPL is a list of the most seriously contaminated sites in the United States, which prioritizes the need for cleanup. As with many post-military sites, the arsenal ranked among the most polluted places on the Earth.

In 1986, the U.S. Army discovered a roost of bald eagles on the site.[28] At first, scientists were concerned about the health impacts to the birds, which were protected by the Endangered Species Act and the Bald Eagle Act.[29] Researchers captured the birds and took blood and tissue samples, leading to the conclusion that the eagles were healthy.[30] Policymakers' discussions led to the decision to transform the site to a wildlife refuge, which was proposed by the National Wildlife Federation, a prominent environmental organization.[31] To accomplish this goal, Congress passed the Rocky Mountain Arsenal National Wildlife Refuge Act (RMANWR Act) in 1992.[32]

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[27] GERALD NASH, THE AMERICAN WEST TRANSFORMED: THE IMPACT OF THE SECOND WORLD WAR (Ind. Univ. Press, 1985)(focusing on the impact of WWII to the west).

[28] Jeffrey Cohn, *A Makeover for Rocky Mountain Arsenal: Transforming a Superfund Site into a National Wildlife Refuge*, 49 BIOSCIENCE 273-275 (1999).

[29] *Id*.

[30] *Id*. The health effects of contamination have been studied specific to mammals, birds and insects, with varying effects due to many different factors including exposure pathways. For further discussion of the studies *see id*. at 275-277. The ROD, *infra* note 37, also addresses how the cleanup will address wildlife.

[31] *Id*.

[32] Rocky Mountain Arsenal National Wildlife Refuge Act of 1992, Pub. L.

Among its provisions, the Act restricted the sale of part of the land still containing waste and remediation facilities, which the U.S. Army will continue to own. Apart from those sections, the vast acreage was set to be managed by the Federal Fish and Wildlife Service (FWS).

Several events are heralded as points of light in this restoration. In 2004, 4,930 acres of land was transferred from the Army to the Department of the Interior to be managed by FWS. In 2006 another 7,266 acres was transferred. These are areas that can now be visited by the public. In 2007, bison were returned to the RMA. The herd will be part of an effort to improve the health of bison as a species, by maintaining a stock of bison genetically distinct from other herds.[33]

Unrelated to the cleanup efforts, but nonetheless newsworthy, a Natural Resources Damages (NRD) settlement was reached by the parties in 2009. Colorado Natural Resource Trustees sought NRDs from Shell and the Army to compensate for water and wildlife losses. The NRD assessment prepared by Colorado trustees supports further compensation beyond restoration of the RMA Refuge, in part resting on the fact that the completed cleanup will still result in contamination remaining at the site and in surrounding areas for decades.[34] An agreement in principle was reached that would give $35 million to the state to compensate for natural resource damages.[35] The vision for the region is a corridor of open space, which will be funded by the NRDs from this settlement.[36] The Colorado Attorney General has claimed that the Refuge is the lynchpin of this corridor.

B. Legal Background.

Although the RMANWR Act of 1992 set forth the legal

No. 102-402 (1992).

33 Press Release, Pilot Bison Project at Rocky Mountain Arsenal National Wildlife Refuge, U.S. Fish & Wildlife Service, Jan. 1, 2007. The press release details how the FWS is transferring bison among and between refuges to guard against loss of genetic material.

34 *See* News Release, Colorado Dep'ts. of Law and Public Health and Environment (Oct. 29, 2007).

35 Press Release, Colo. Att'y Gen., Colorado Settles Rocky Mountain Arsenal Suit (May 29, 2008), *available at* http://www.ago.state.co.us/press_detail.cfmpressID=911.html. John Ingold, Arsenal Deal Opens Tap for Cleanup: Groundwater Pollution Spurs the Largest Environmental Settlement in State History, Denver Post, May 30, 2009.

36 These types of arrangements where restoration awards are used off-site have come under scrutiny. *See* Diane S. Calendine, Comment, Investigating the Exxon Valdez Restoration Effort: Is Resource Acquisition Really Restoration? 9 Dick. J. Envtl. L. & Pol'y 341 (2000) (expressing preference for a hierarchy where on-site restoration is first required and replacement habitat purchased elsewhere only when restoration is infeasible).

framework for the RMA Refuge restoration, several laws were implicated at the RMA site prior to its adoption. In addition to the hazardous waste and toxic materials laws such as the Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Colorado's health and safety laws, the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act all required action.[37]

Few would have predicted that the RMA could ultimately return to a community asset during the most tumultuous years of litigation.[38] This is particularly so because the government entities involved have been locked in power struggle, engaged in deceptions, and had lost sight of the public interest in an orderly, transparent cleanup of the site.[39] The power struggle has largely been between the military and State of Colorado. Early litigation focused on whether the state of Colorado could assert authority over the cleanup of the site.

In *United States of America v. State of Colorado*, the United States brought a declaratory judgment action arguing that CERCLA provisions precluded the State of Colorado from enforcing its hazardous waste laws.[40] The State of Colorado had identified off-site water contamination, and required that the Army submit a closure plan for Basin F, an area used as a repository for hazardous waste by the Army and Shell. The State was authorized by the EPA under the Resource Conservation and Recovery Act (RCRA) to carry out its own equivalent hazardous waste laws "in lieu of" RCRA. The federal government, like any

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[37] The Record of Decision also discusses how the remedial actions were constrained not only by these acts, but by Army UXO and agent management and disposal requirements as well as the Chemical Weapons Convention. *See* EPA Superfund Record of Decision, Rocky Mountain Arsenal (US Army), EPA/ROD/R08-96/129, June 1996, http://www.epa.gov/superfund/sites/rods/fulltext/r0896129.pdf, at § 10.1.2.4 ("Other Requirements") [hereinafter ROD].

[38] Litigation included disputes over cleanup responsibility, apportionment of costs for cleanup, damage to crops and other property prior to remediation, and personal injury claims. As one court, focusing on toxic tort claims brought by Plaintiffs who alleged personal injury and property damages arising from cleanup activities noted, "The parties involved in the Arsenal cleanup have litigated extensively in an effort to assign responsibility under CERCLA and various state statutes for the cleanup." *Daigle v. Shell Oil Company and United States*, 972 F.2d 1527, 1532 (10th Cir. 1992).

[39] The public outreach by the RVO was extensive, including public meetings, videos, brochures, and interviews. Despite such a significant public outreach campaign, many citizens still express distrust of the RVO. Among the incidents highlighted in this article that help to explain this sentiment are those that led to a grand jury report in 2002, dispute over soil testing for dioxin, the Army and Shell's petition to release more DIMP to groundwater, and the much more subtle struggle over the name of the refuge.

[40] United States v. Colorado, 990 F.2d 1565 (10th Cir. 1993), *cert. denied*, 510 U.S. 1092 (1994).

private party, must also comply with RCRA or an EPA-authorized state program.[41] The district court's decision took note of the conflict of interest inherent as the federal government was both the polluter (Army) and responsible for cleanup oversight (EPA). It ruled that having the state involved in oversight of the cleanup would likely result in a more thorough cleanup. However, the court's decision also relied heavily on the fact that Basin F was not on CERCLA's National Priorities List (NPL). Later, once basin F was listed on the NPL, the district court decided that the state could not enforce its hazardous waste laws, since CERCLA precluded pre-enforcement challenges of corrective actions taken at Superfund (NPL listed) sites. On appeal, the 10th Circuit Court of Appeals held that Colorado was seeking to enforce its parallel authority under its hazardous waste laws, not "challenge" the corrective action.[42]

The decision did not ensure cooperation among parties engaged in remediation. Tensions among the state, federal, responsible private parties and community actors interested in remediation continued in and out of the courts. One of the most egregious of deceptions that have hampered successful progress on restoration is detailed in a grand jury report (Spring 2002) regarding an investigation done by the Colorado Attorney General into the mishandling of hazardous waste at the site.[43] One of the grand jury findings relates to the poor relationship between the Army and the State of Colorado. In October of 2000, sarin nerve agent was discovered in a bomb at the RMA in an area known as the "boneyard." The Army informed the Colorado Department of Public Health and Environment (CDPHE) that it intended to detonate the bomb in an open area of the RMA. CDPHE issued an emergency compliance order (ECO) to prevent such action or any incineration, destruction or disposal of the sarin bomblet without CDPHE authority. Further the ECO required that the Army would notify the CDPHE in writing seventy-two hours in advance of any excavation or other investigatory or remedial activities in the boneyard. The Army, its cleanup contractor, the CDPHE and the

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[41] 42 U.S.C. § 6961 (2011).

[42] *Colorado,* 990 F.2d 1565, 1579. The federal government also unsuccessfully argued that CERCLA's ARAR process was meant to be the only vehicle for state involvement in setting cleanup objectives. *Id*. at 1580-1581. For criticism of the decision see Ensign Jason H. Eaton, *Creating Confusion: The Tenth Circuit's Rocky Mountain Arsenal Decision*, 144 MIL. L. REV. 126 (1995) (examining the state's victory); for support of the decision, *see* Vicky L. Peters et al., *Can States Enforce RCRA at Superfund Sites? The Rocky Mountain Arsenal Decision*, 23 Envtl. L. Rep. 10419 (1993) (concluding the decision paves a path toward increased cooperation between state and federal agencies in setting cleanup objectives).

[43] State Grand Jury Report 2008-2009, District Court, City and County of Denver, Colorado, Case No.: 01CR001, 2000-2001, www.cpeo.org/lists/military/2002/msg00481.html.

EPA met following this incident and a First Amendment to the ECO was issued by the CDPHE. It reiterated the seventy-two-hour advance notice requirement and required the Army to develop a chemical site safety plan detailing how the Army and its contractor would manage investigation of the boneyard. The Army submitted the plan in February 2001. Thereafter, on April 9, 2001, the Army and its contractor entered into the boneyard for "housecleaning" purposes—according to the contractor the goal was to go through a debris pile and determine what ordnance were present. There an unexploded M-74 munition was found. The Army and its contractor decided to put the munition back where it was found and to deceive the CDPHE regarding its discovery. The CDPHE was not provided seventy-two-hour notice that the Army and its contractor intended to take any actions in the boneyard. On May 8, 2001, following the CDPHE's approval of the Army's Chemical Site Safety Submission a "rediscovery" was staged and documented in the weekly Health and Safety log. It is only due to an anonymous phone call to a CDPHE project manager that the truth was in fact discovered.

It is clear that power struggle and deceptions have overshadowed the public interest in an orderly cleanup. As recently as 2007, a life-threatening discovery at the cleanup site appeared in the headlines and caused officials to close the refuge to the public as a precaution.[44] Lewisite, also known as the "dew of death" was found. Again this contradicted the cultivated/constructed image of the RMA Refuge as safe. The image control ongoing at the site must always recede when public health or safety issues arise. The Army and Shell, who are both responsible for the contamination, are struggling to create a purely positive image of the cleanup as the creation of an important community benefit and thus have, at times, breached the public trust by their lack of transparency when presented with challenges to the very narrow story they want internalized. Critics of "marquee" or "headline" grabbing cleanups are suspect of the true objectives of these restoration efforts to truly mend the environment.[45] It is questionable whether the projects are undertaken primarily with the goal of mending the public image of the entities that are responsible for the project (and often for the damage being mended).[46] The history of the RMA Refuge

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[44] *See* John C. Ensslin, *Lewisite Tests to Begin Today*, DENVER ROCKY MOUNTAIN NEWS, Nov. 14, 2007.

[45] The related concern is that restoration will really result in manipulation. For a discussion of this danger in terms of forest stewardship see SHAUL E. COHEN, PLANTING NATURE: TREES AND THE MANIPULATION OF ENVIRONMENTAL STEWARDSHIP IN AMERICA (2004).

[46] Attention to industry attempts at "greenwashing" have led scholars to look at whether the activities of a particular company that damage the environment can and are remediated, among other activities. *See* Lisa Johnson, *Do the Good Guys Always Wear Green? An Analytical Framework to*

restoration animates this suspicion.

III. FAUX NATURE AND THE RMA REFUGE

Humans have been shaping their environment since they have been a species. The American West did not escape this process.[47] Nonetheless, it is important to recognize that the changes people introduced to our landscapes through industrialization and other forms of development are of a dramatically different scale in contrast to the changes that came before. As the cumulative ill effects of natural resource destruction and deterioration of environmental systems that provide support to all life on earth became evident, environmental laws sought to curb harmful impacts to the environment. Urbanization and development have caused the disappearance of wildlife habitat, which is critical for preventing the extinction of wildlife species. To remedy that situation, many environmental laws now require the re-creation or restoration of natural habitat when proposed development will cause natural habitat destruction, such as the mitigation that occurs under the Clean Water Act[48] and the National Environmental Policy Act.[49] Other laws[50] provide incentives for restoration for areas degraded less directly or less intentionally by human activities. Another category of laws address pollution incidents,[51] which can deprive the landscape of all uses for either humans or other species, and in some instances pose a danger to all life unless some actions to undo the damage is taken.

Any of these mitigation activities—such as creating replacement wetlands—can be brought under the term "faux

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Evaluate Businesses' Relationship to the Natural Environment, 10 J. L & SOC. CHALLENGES 55 (2008).

[47] PATRICIA LIMERICK NELSON, THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST (1987).

[48] 33 U.S.C. §§ 1251-1387.

[49] 42 U.S.C. §§ 4321-4370e. Although NEPA requires that the action agency consider mitigation measures within the alternatives analysis, an agency need not adopt mitigation measures to comply with NEPA. Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989). Nonetheless, many projects that trigger NEPA result in mitigation projects, or project proponents undertake voluntary mitigation projects to drop the level of impact below a threshold of significance to avoid full NEPA analysis. *See, e.g.* Cabinet Mountains Wilderness v. Peterson, 685 F.2d 678 (D.C.Cir. 1982).

[50] For example, pursuant to the Endangered Species Act, habitat conservation plans (HCPs) under section 10 may allow a private party to pursue development that unintentionally may harm listed species. HCPs can include commitments to restore degraded habitat. 16 U.S.C. § 1539(a)(2)(A).

[51] Both CERCLA and the Oil Pollution Act follow this approach, and both have provisions that allow specified government trustees to seek damages to natural resources that may go beyond the immediate response to pollution incidents. CERCLA 101(6); 107(a)(4)(C); OPA 1001(5); 1002(b)(2).

nature"—a landscape created or restored by humans to mimic as nearly as possible the natural environment that may have existed there or somewhere else at a prior time. Among its many other functions, faux nature is a way for people to address the cumulative ill effects on the environment of various facets of our lifestyles in a directed effort at a particular site. But it is also heralded as something much more—a way to encourage environmentalism and reverence for the natural world more broadly at a time when it is badly needed. One of the most promising features of restoration as a practice is its potential to connect people with landscapes and encourage an ethic that elevates protection of a healthy-functioning environment.[52] The argument made by restoration proponents is that individual actors engaged in restoration will internalize and spread an environmental ethic.[53]

The difficulty in applying this theory to the RMA Refuge is that the actors (both individual and institutional) engaged in the restoration have little connection to building an environmental ethic. What is more, the community has little opportunity to contribute or engage in restorative acts because of the dangers of the pollution at the site and lack of trust in the safety of entrants to the land.[54] At times the community has been enraged by the lack of transparency and outright deception perpetrated by those responsible for restoration, and frustrated by marketing of the refuge which downplayed the risks and trade-offs made in the remedy selected for the site.

It cannot be overlooked that the business of restoration involves as much failure as success – with a significant loss in ecosystem function resulting from inadequate or non-existent baselines and the inability to re-create natural features.[55] Although rare, the environment also loses when developers commit to restore or provide replacement habitat and do not

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[52] WILLIAM R. JORDAN III, THE SUNFLOWER FOREST: ECOLOGICAL RESTORATION AND THE NEW COMMUNION WITH NATURE (2003).

[53] *Id.*

[54] *See, e.g.* Richard Fleming, Oversight Overkill (October 19, 1994) (noting reluctance of some community members to go onto the arsenal perhaps due to concerns about the contamination).

[55] Studies on the loss of ecosystem function include California State Water Resources Control Board (CSWRCB) Permit Review (Aug. 2007); OFF. OF INSPECTOR GEN., W. REGION, U.S. DEPT. OF AGRIC., REP. NO. 10099-4-SF, NATURAL RESOURCES CONSERVATION SERVICE, WETLANDS RESERVE PROGRAM: WETLANDS RESTORATION AND COMPLIANCE (Aug. 2008), http://www.usda.gov/oig/webdocs/10099-4-SF.pdf.; Rebecca L. Kihslinger, *Success of Wetland Mitigation Projects*, NAT'L WETLANDS NEWSL., MAR.-APR. 2008, AT 14, *available at* http://www.wetlandsnewsletter.org/pdf/30.02/kihslinger.pdf. *See also* Royal C. Gardner, *Banking on Entrepreneurs: Wetlands Mitigation Banking, and Takings,* 81 IOWA L. REV. 527 (1996).

undertake any efforts to do so.[56] Thus, oversight is required to ensure that restoration projects are actually completed and do not just exist on paper.

More critical of restoration itself as a means of environmental protection, some environmental ethicists have questioned whether the construction of natural habitat is simply "faking nature" instead of taking more aggressive efforts at conservation. Though restoration ecology has become a heavily science-based discipline,[57] its products remain artificial landscapes (or human-created natural habitats) and the concerns that it further emphasizes technological optimism over conservation have yet to be resolved.[58] Thus, the precaution that might otherwise be exercised to preserve existing natural habitat, increase density, and reduce sprawl is abandoned for the promise of human-constructed natural habitat "elsewhere".

Specific to the RMA Refuge, provisions of CERCLA provide mechanisms for achieving remediation of sites contaminated by hazardous waste. Further, CERCLA provides that specified government trustees can obtain natural resource damages to compensate for injuries to wildlife, water and a wide range of other elements of the natural environment. The site was once a home for species such as bison and bald eagles, and it is now being re-created by human engineering to sustain these species once again. National Wildlife Refuges are the primary designation within the federal public lands system focused on providing habitat for wildlife as its primary management directive. To the extent that human activities, such as recreation, are compatible with wildlife those activities are allowed. Otherwise – wildlife rules.[59] Refuges

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[56] U.S. GOV'T ACCOUNTABILITY OFFICE, GAO 05-898, WETLANDS PROTECTION: CORPS OF ENGINEERS DOES NOT HAVE AN EFFECTIVE OVERSIGHT APPROACH TO ENSURE THAT COMPENSATORY MITIGATION IS OCCURRING (2005).

[57] Some restorationists warn of the professionalization of restoration thwarting engagement toward an environmental ethic, *see, e.g.* ERIC HIGGS, NATURE BY DESIGN: PEOPLE, NATURAL PROCESS, AND ECOLOGICAL RESTORATION 186 (2003) (discussing how we could create an ethos of 'if you destroy it, we can fix it'); Andrew Light, Restoration, *The Value of Participation, and the Risks of Professionalization, in* RESTORING NATURE: PERSPECTIVES FOR THE SOCIAL SCIENCES AND HUMANITIES 163 (Paul H. Gobster & R. Bruce Hull eds., 2000). Failures are still pretty widespread. *See, e.g.* Rebecca L. Kihslinger, *Success of Wetland Mitigation Projects*, NAT'L WETLANDS NEWSLETTER (Aug. 2008) (concluding that despite no net loss goal the National wetlands policy was resulting in both loss of acreage and functions); *see also Ohio Valley Environmental Coalition v. United States Corp of Engineers*, 479 F.Supp. 2d 607 (S.D. W. Va. 2007) (expert testified that they knew of thousands of restoration projects which failed to re-create or restore adequate stream conditions).

[58] ROBERT ELLIOT, FAKING NATURE: THE ETHICS OF ENVIRONMENTAL RESTORATION (1997).

[59] Robert L. Fischman, *The National Wildlife Refuge System and the Hallmarks of Modern Organic Legislation*, 29 ECOLOGY L. Q. 457 (2002)

are, in many ways, similar to National Parks, those federal lands most Americans are familiar with as "showcases of nature."[60] And yet, for political feasibility, visitation is essential to counter criticism that such land is underutilized.[61] The RMA Refuge free weekend bus tour provides one expression of this truism. A second is the planned visitor center. Both illustrate that the RMA Refuge is a place for wildlife and people. The introduction of bison in 2007 greatly increased visitation.

The RMA Refuge restoration is a sign-of-the-times.[62] Within the context of environmental protection, we are in a phase of physically re-constructing natural habitats as a significant component of meeting legally imposed restrictions to mitigate adverse environmental impacts, and to respond to past violations of law and pollution events. This approach has raised new questions of techno-optimism, over-reliance on human engineering, and the age-old question of humans' place in the natural world. While restoration policy is still in development,[63]

(discussing how the compatibility standard operates and how conservation of species is further bolstered by the Act's focus on biological integrity, diversity and environmental health mandates).

[60] PATRICIA LIMERICK NELSON, THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST 309 (1987).

[61] *Id*. at 308.

[62] These projects are being undertaken all over the world, in countries ranging from Australia, China, Japan, Mexico and New Zealand. In the U.S., it has been recognized as an important part of improving the quality of the natural environment and preserving biodiversity. *See, e.g.* Jamison Colburn, *Habitat and Humanity, Public Lands Law in the Age of Ecology*, 39 ARIZ. S. L. REV. 145 (2007). Private lands contain much of the "wild" lands that could be used to promote species protection. Jamison Colburn, *Bioregional Conservation May Mean Taking Habitat*, 37 ENVTL. L. 249 (2007). In addition to restoration occurring on private lands, federal policy has shifted toward conservation and preservation, further supporting a restoration agenda. *See, e.g.* Jan G. Laitos and Thomas A. Carr, *The Transformation on the Public Lands*, 26 ECOLOGY L. Q. 140, 160-172 (1999) (discussing rise of recreation and preservation due to statutory mandates and market forces). The authors discuss how areas such as National Wildlife Refuges express "a conscious decision" to use public lands for generating ecosystem services and providing low-impact recreation. *Id*. at 192. Furthermore, two journals are now dedicated to ecological restoration. Ecological Management and Restoration is published by Wiley-Blackwell on behalf of The Ecological Society of Australia Incorporated, and seeks to bridge ecologist's perspective and land manager's practice in restoration. Restoration Ecology is published on behalf of The Society for Ecological Restoration International, by Wiley InterScience, and the journal promotes itself as at the "forefront of a vital new direction in science and ecology." With all this said, we have not launched restoration as a full-fledged national agenda. *See* Jamison Colburn, *The Fire Next Time: Land Use Planning in the Urban/Wildlife Interface*, 28 J. LAND RESOURCES AND ENVTL. L. 223, 234-35 (2008).

[63] Peter Lavigne, *Humpty Dumpty and Restoration Policy*, 45 NAT. RESOURCES J. 495, 497 (2005)(lamenting lack of cohesion on restoration policy but contrasting it with constant stream of "tragic remedies"); A. Dan Tarlock, *Slouching Toward Eden: The Eco-pragmatic Challenges of Ecosystem Revival*,

several benchmarks for successful restorations have become commonplace.

First, biological integrity issues are the foundation for questions about whether the technical aspect of the restoration work achieves ecosystem functions.[64] For example, assessment of a re-created or engineered wetland would ask whether it produces the same ecosystem services of water filtration, nutrient cycling, and flood protection.[65] The second element, historical fidelity, tethers the engineering of the environment to biological features that existed prior to various human manipulations at the specific site. The goal could be set to mimic biologic conditions at a defined point in the past. However, if the restoration included planting redwood trees, historical fidelity is only met if redwood trees had been present at some point in the past. Third, legal scholars encourage us to benchmark the success of a restoration by its capacity to cut off sources of environmental degradation.[66] Thus, if the Army and Shell were allowed to dump newly generated hazardous waste at the site, the restoration would fail to achieve this benchmark. As the formalization of restoration practice occurs, this last and often-overlooked piece could be the key to ensuring restoration does not become simply a conservation substitute. Finally, public engagement in restoration projects can shape individual and community dedication to future environmental protection.[67] This moves the restoration project out of its site-specific context.

Ultimately, it must be well recognized that nature construction involves a significant degree of decision-making and intentionality—a human intervention geared toward human desired goals. This tension runs through many of our federal laws

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97 MINN. L. REV. 1173 (2003) (expressing concern that much restoration occurs without legal guidance).

[64] As previously mentioned, often the engineering required is beyond our knowledge or understanding, and the integrity of these projects is rarely challenged in court, although challenges could be on the rise as restoration practice formalizes. For some examples see *Env'tl Def.v.U.S. Army Corps of Eng'rs*, 515 F. Supp. 2d 69 (D.D.C. 2007) (deciding that Corps did not adequately ensure scientific integrity of decision-making when crafting mitigation project for the loss of fish and wildlife habitat); *Cal. Native Plant Soc'y v. County of El Dorado*, 88 Cal. Rptr. 3d 530 (2008) (scientists testified that measures for transplanting and propagating rare plants were speculative, and court found too much reliance on "unproven techniques" to remedy loss by approved development).

[65] For a full discussion of ecosystem services, *see* J.B. RUHL, STEVEN KRAFT & CHRISTOPHER LANT, THE LAW AND POLICY OF ECOSYSTEM SERVICES (2007); *see also* Thomas C. Brown et. al., *Defining, Valuing, and Providing Ecosystem Goods and Services*, 47 NAT. RESOURCES J. 329 (2007).

[66] Alyson C. Flournoy, *Restoration Rx: An Evaluation and Prescription*, 42 ARIZ. L. REV. 187 (2000).

[67] ERIC HIGGS, *Nature by Design:* PEOPLE, NATURAL PROCESS, AND ECOLOGICAL RESTORATION (2003).

that manage public lands, and thus is not entirely a new struggle to be dealt with, but one that continues within natural resource management policymaking more generally.[68] In a related context Professor Limerick Nelson remarks on the business of wilderness management in the West and its challenges.

…[T]he idea of nature restored still came with strings attached. Nature running itself should be attractive, interesting, and instructive; it should, in other words, meet certain standards of which humans were fond. The very idea of natural "balance" or "harmony" indicated a model in the mind, by which natural processes would be measured and judged.[69]

Focusing on the intentionality and endpoint objections, the RMA Refuge poses the question whether this particular faux nature project is a community asset or a sleight of hand. The RMA Refuge restoration illustrates how such projects can fail to foster environmentalism and instead provoke disdain.

Although faux nature can (but does not always) achieve legal requirements set by environmental laws by achieving the benchmark of biological integrity, ensuring such projects result in a community asset requires a focus on community buy-in better expressed in the last three benchmarks – historical fidelity, recognizing the roots of the problem that led to environmental damage, and engaging the public. Achieving these benchmarks is vitally important to avoiding the pitfall of faux nature as a conservation substitute and resulting in a community asset.

IV. A Restoration in Progress

A. Biological Integrity: CERCLA and Risk-Based Corrective Action.

Ecological restoration in different shapes and forms is taking place across the nation. Some of the most prominent projects are undertaken in locations where extensive development and industrial and urban activities have depleted natural resources vital to survival. The Florida Everglades, Chesapeake

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[68] PAUL W. HIRT, A CONSPIRACY OF OPTIMISM: MANAGEMENT OF THE NATIONAL FORESTS SINCE WORLD WAR TWO (1994) (discusses the intensive management of the National Forests under the belief that both timber and wildlife interests could be satisfied if only the Service undertook more intervention to alter natural processes. Fire suppression and other manipulations of natural systems are increasingly challenged as bad policy. On the other hand, the National Parks are managed to disguise the interventions when possible, and natural processes are more often left to take their course. Introduction of predator species to improve ecosystem function was a controversial restoration of National Park ecosystems.).

[69] PATRICIA LIMERICK NELSON, THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST 309-10 (1987).

Bay, and the Colorado River are some of the most notable examples. But smaller projects, both on public and private lands, are also occurring, sometimes undertaken by local citizens, state or federal agencies, or non-profit organizations. This is so despite continued controversy over a restoration agenda or even the definition or meaning behind the term "ecological restoration."[70] The debate over the definition of ecological restoration is illustrated by a focus on two of the most oft-cited definitions.

The U.S. National Research Council (NRC) defines restoration as follows:

> Restoration is defined as the return of an ecosystem to a close approximation of its condition prior to disturbance. In restoration, ecological damage to the resource is repaired. Both the structure and the functions of the ecosystem are recreated. Merely recreating the form without the functions, or the functions in an artificial configuration bearing little resemblance to a natural resource, does not constitute restoration. The goal is to emulate a natural, functioning, self-regulating system that is integrated with the ecological landscape in which it occurs. Often, natural resource restoration requires one of the following processes: reconstruction of antecedent physical hydrologic and morphologic conditions; chemical cleanup or adjustment of the environment; and biological manipulation, including revegetation and the reintroduction of absent or currently nonviable native species.[71]

The Society for Ecological Restoration states: "Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."[72]

Although the term is contested, the comparison of these two definitions illustrates that damage to function and repair of ecosystems cuts across different views of restoration. Thus, in identifying biological integrity as one of the key benchmarks of success in a restoration, I seek to capture the shared idea that repair of a damaged environment is a key goal for all restorations.

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[70] As one scholar has put it, "restoration of damaged ecosystems is an agenda with no beginning, no end, few champions, and mixed moral implications. When we speak of environmental restoration, we do so without any meaningful consensus on its purpose or point." Jamison Colburn, *The Fire Next Time: Land Use Planning in the Urban/Wildlife Interface*, 28 J. LAND RESOURCES & ENVTL. L. 223, 234-35 (2008).

[71] NAT'L RESEARCH COUNCIL, RESTORATION OF AQUATIC ECOSYSTEMS: SCIENCE, TECHNOLOGY, AND PUBLIC POLICY (1992).

[72] Soc'y for Ecologial Restoration, *Section 2: Definition of Ecological Restoration*, INTERNATIONAL PRIMER ON ECOLOGICAL RESTORATION (Version 2, Oct. 2004), http://www.ser.org/resources/resources-detail-view/ser-international-primer-on-ecological-restoration#3.

The RMA Refuge restoration is driven by the need to abate a public nuisance. The cleanup would occur regardless of the additional work to transform the site to pre-developed conditions. Unlike other restoration projects that are not driven by established statutory mandates, the RMA Refuge restoration fits within a hazardous waste cleanup model. The restoration will not completely repair the natural systems impacted, for the practical reasons and policy choices discussed below.

Cleanups are inherently keyed to health standards. CERLCA requires that remediation achieve applicable or relevant and appropriate requirements ("ARAR's").[73] ARARs are cleanup standards derived from other laws and regulations, as CERCLA does not itself establish specific cleanup standards for releases of chemicals. ARARs are typically established during the remedial investigation/feasibility study phase, are subject to comment, and then are adopted as benchmarks for cleanups. Through this process site-specific cleanup goals are developed. Thus, an enduring question and often a point of dispute in each CERCLA remediation is "how clean is clean" at any particular site.[74] An often-competing requirement is that the remedial approach be "cost effective."[75] The approach of "risk-based" corrective action (RBCA or "Rebecca") was popularized because of the potential to obtain cleanups which were more economical, but put the land into productive uses more quickly than might otherwise be accomplished if cleanup standards were automatically set at pre-pollution background or "pristine" levels. Instead of approaching the clean-up objectives from the perspective of any potential future use at the site, RBCA facilitates more modest remediation goals based on a lower risk of exposure for certain uses of land. For example, a residential backyard would receive much more aggressive clean-up actions than a site developed for use as a parking lot. The RMA Refuge is an example of RBCA.

Federal facilities, such as the former Rocky Mountain Arsenal, are some of the most extremely polluted sites in the country.[76] Particularly in the context of federal facilities cleanups,

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[73] 42 U.S.C. § 9621(d) (2011)(addressing the degree of cleanup). State involvement in remedial actions includes comment on the plan for cleanup of sites within the state. 42 U.S.C. § 9621(f)(1)(E)(2011).

[74] *See generally* Gerald W. Phillips, *Rethinking Restoration: Risk Based Corrective Action and the Future of Economic Regulation*, 16 N. ILL. U. L. REV. 659, 664 (1996).(positing that "the philosophy" of how clean is clean "is evolving"). *Id.*

[75] 42 U.S.C. § 9621(b)(1), stating that "The President shall select a remedial action that is protective of human health and the environment, that is cost effective, and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable." *Id.*

[76] A review of the National Priorities List illustrates this, with many current or former air force bases and other military installations listed. EPA,

the "future uses" approach has made a significant difference in setting cleanup targets at more modest levels. Identifying the future use of a contaminated site will result in a particular risk profile specific to that use. Remediation objectives are then adjusted to that risk profile. The following excerpt from an article by John S. Applegate and Stephen Dycus is instructive on the logic of a scaled cleanup approach:

> If the future use of [a lake with contaminated sediments] is a wildlife refuge, remedial action may not need to be taken if the contamination is contained in stable sediments. At the other end of the land use spectrum, agricultural use of a site involves exposure to the farmer though direct dermal contact with soil and groundwater, extended opportunities to inhale contaminated dust, and occasional ingestion. Residential use has a similar exposure profile, because children play in their yards and adults dig in their gardens. Industrial and commercial uses, however, involve considerably less potential contact…. Recreational uses of green space involve even less exposure, because most people spend far less time at recreational sites than at work or home, and their activities (apart from sports) typically involve only limited contact with the soil.[77]

A Federal Facilities Agreement (FFA) signed by the U.S. Army, the EPA, U.S. Agency for Toxic Substances and Disease Registry, U.S. Fish and Wildlife Service, U.S. Department of Justice, and Shell in 1989 imposed future land use restrictions.[78] Thereafter, the RMANWR Act also imposed similar future use restrictions. These include the federal government retaining ownership, prohibiting agriculture production and the consumption of fish or game taken on the site. On June 11, 1996, the U.S. Army, U.S. EPA and the State of Colorado signed a Record of Decision (ROD) governing remediation of the RMA.[79] The obligations of the polluting parties (the U.S. Army and Shell) are outlined in the ROD, and Shell and FWS signed letters endorsing the ROD, the FWS undertaking responsiblity for wildlife management at the site. The Remediation Venture Office (RVO) is a unique tri-part collaboration between the U.S. Army,

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NATIONAL PRIORITIES LIST, http://www.epa.gov/superfund/sites/npl/index.htm (last updated Mar. 2, 2012). *See also* John S. Applegate & Stephen Dycus, *Institutional Controls or Emperor's Clothes? Long Term Stewardship of the Nuclear Weapons Complex*, 28 ENVTL. L. REP. 10631 (1998); Ensign Jason H. Eaton, *Creating Confusion: The Tenth Circuit's Rocky Mountain Arsenal Decision*, 144 MIL. L. REV. 126, 127 (1995) (discussing the Department of Defense program to clean up polluted military bases).

[77] *See* Applegate & Dycus, *supra* note 76.

[78] Federal Facility Agreement for the Rocky Mountain Arsenal, EPA Docket No. CERCLA VIII-89-13 (1989), http://www.doi.gov/restoration/library/casedocs/upload/CO_Rocky_Mt_Arsenal_FFA_89.pdf.

[79] ROD, *supra* note 37.

Shell Oil Company and the FWS that is undertaking the transformation of the site from contaminated military base to national wildlife refuge.

The key choice for the remedy at the site was to allow contaminated soils and buildings to be landfilled there. This was essentially a decision to create a hazardous waste repository. It is a sad but necessary assumption that all hazardous waste repositories will eventually leak, and even leading environmentalists have expressed this concern, while others pragmatically accept the inevitable limitations of cost-effectiveness.[80] With this in mind, one can understand why this decision was most central to driving other options for the surrounding area. Contaminated soils were only excavated to either five or ten feet, depending on the location. This leaves a significant amount of contaminated soil beneath, which will be leaking mostly pesticide residues into the groundwater for years to come. Thus, part of the remedy was also providing replacement water supplies and continuing to treat groundwater at the site. Given these cleanup objectives, the ROD also requires a five-year review to ensure human and environmental health is not impacted by the contamination.

The RMA Refuge Act, adopted by Congress prior to the ROD in 1992, takes care to note that the designation of the RMA site as a future wildlife refuge did not alter cleanup obligations. The Act confirms that the "establishment of the refuge shall not restrict or lessen in any way any response action or degree of cleanup" pursuant to CERCLA or other laws.[81] However, this confirmation is deceptive. It is the goal of CERCLA to ensure protection of human health and the environment in setting cleanup standards. Certainly, if the RMA was proposed to be used as single-family housing or an elementary school where children would frequently come into contact with soil, the degree of care and level of residual contamination would indeed differ greatly from the degree of cleanup which is acceptable in the instant situation where wildlife inhabits the land. If different future uses for the RMA were chosen it would not have been possible to include onsite landfills to contain hazardous waste product. For example, prior to the suggestion that the RMA be made into a wildlife refuge, suggestions included its use as an industrial park, possible

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[80] Jeffrey P. Cohn, *A Makeover for Rocky Mountain Arsenal: Transforming a Superfund Site into a National Wildlife Refuge*, 49 BIOSCIENCE, 273, 277 (1999) (citing Sierra Club Rocky Mountain chapter president Sandy Horrocks' expectation that materials will eventually leak out, and National Wildlife Federation senior advisor Tom Dougherty's point that a more extensive cleanup would cost "billions more").

[81] Rocky Mountain Arsenal National Wildlife Refuge Act of 1992, § 3(c), Pub. L. No. 102-402 (1992).

expansion of the Stapleton Airport, or cleanup to levels allowing local residential development. [82] In fact, the RMA Refuge Act allowed the sale of a portion of the land to raise money for a visitor center. In 2004 a parcel that was decontaminated and then deleted from the NPL was sold to Commerce City. [83] The land has become the Prairie Gateway, including commercial, retail development and a large soccer stadium, with future plans for a high school and additional retail space. [84]

The cleanup plan for the RMA, embodied in the Record of Decision and including the levels of remediation and restricted future uses, was the culmination of the process described above, including a significant amount of public input. [85] Yet, citizens perceived the choice to remediate the site to provide wildlife habitat as a means to shortcut more extensive cleanup at the site. It is of course more economical to identify a future use that will limit exposure and thus reduce risk to those coming in contact with soil and water at the site. Nonetheless, those living in the vicinity of the cleanup site may hold scorn for a less than aggressive remediation to remedy past pollution and eliminate risk to human health. They may fail to embrace the scaled approach in this particular case, questioning its fairness. Some may ask/have asked why the site should not be cleaned up to a future use more directly related to future uses predicted as a need in the community. Scholars such as Victor Flatt have evaluated the weaknesses of risk-based corrective actions and exposed the potential failure to reach fair results that would otherwise be expected under common law doctrine. [86] Under this view, RBCA is no more than a perversion of the polluter pays concept, the idea that the actor who has caused pollution should bear the cost of remedying associated harm from such pollution. [87] Further, RBCA does not adequately redress harm to the victim in a way that

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[82] *Id*. at 275.

[83] Community Involvement Plan for Rocky Mountain Arsenal Contamination Cleanup, Public Relations Office 5-7 (Revised Plan published January 2008).

[84] *Id*.

[85] Public input is required both under CERCLA, 42 U.S.C. § 9617 (2006) and the National Environmental Policy Act.

[86] Victor B. Flatt, *"[H]e Should At His Peril Keep It There…": How the Common Law Tells Us That Risk Based Corrective Action Is Wrong*, 76 NOTRE DAME L. REV. 341 (2001).

[87] Although the polluter-pays principle is crafted as a rule of prevention in its formulation by the Organization for Economic Cooperation and Development, it has evolved as a principle for liability and restoration. Organization for Economic Cooperation and Development (OECD), Guiding Principles Concerning International Economic Aspects of Environmental Policies, Recommendation C(72) 128, para. 4, adopted May 26, 1972, reprinted in 11 ILM 1172 (1972). *See* Sanford E. Gains, *The Polluter-Pays Principle: From Economic Equity to Environmental Ethos*, 26 TEX. INTL. L. J. 463, 471-487 (1991).

comports with "one of our most bedrock common laws—that the harming party should compensate the victim when that is possible."[88] Others have supported these measures as practical, and part of a realistic approach to achieving environmental protection.[89] The sentiment of many within the Denver community is a mixed bag of resentment for the long over-due cleanup, but realism that the refuge was a cheaper alternative than a cleanup which would have resulted in land usable for the growing metropolitan area.[90]

B. Historical Fidelity: Back to What Past?

Key in the debate over faux nature is the choice of restoration endpoint. Completely separate from the question of human health and environmental cleanup standards is the vision for a certain idealized state of nature, which is sought in restoration projects.[91] For many, the commitment to historical fidelity in a restoration is a measure of a successful restoration project. Restorationists urge that this element not be taken for granted, in favor of simply preferring an environment that is biologically functioning, and delivering the most highly valued ecosystem services (e.g., water filtration, flood prevention) that a particular place can be engineered to produce. Complicating the achievement of an identified historical past is the shifting baseline and lack of records documenting the past.

Clearly, in the case of the RMA, several "pasts" could have been chosen for the restoration—in an era prior to the military activities farming was a prevalent use of the land. In *Nature By Design*, Eric Higgs emphasizes why historical fidelity is as important in successful restoration as biological integrity by focusing on the importance of place and its connection with narrative continuity. While restorations do create a landscape that is human engineered, Higgs gives voice to the concern or imperative that restoration connect us with the land rather than elevate technological optimism above environmental ethic. "If we can maintain the link between science and humanity through the study of history, restoration will allow us to act distinctively on our longings for integrity of the past, ensuring the stewardship of

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[88] *Id*. at 373. In criticizing the EPA for adopting RBCA in administrative decisions, Flatt posits that it is a result driven due to agency capture by industry interests. *Id*. at 372.

[89] Gerald W. Phillips, *Rethinking Restoration: Risk Based Corrective Action and the Future of Economic Regulation*, 16 N. ILL. U. L. REV. 659 (1996).

[90] Groundwater contamination also represents a limitation on potential growth offsite.

[91] A. Dan Tarlock, *Slouching Toward Eden: The Eco-pragmatic Challenges of Ecosystem Revival*, 87 MINN. L. REV. 1173 (2003) (focusing on the trouble of identifying an endpoint of restoration as getting back to *what* past).

historical as well as contemporary dimensions of the world around us."[92]

Arguably the RMA Refuge is on a path to successfully meeting the historical fidelity criteria. FWS wildlife biologists are attempting to re-create the prairies that existed prior to the use of the area for farming. Toward that end, plants and vegetation are brought in and planted at the site, including blue flax, bluestem, blue gamma, buffalo, western wheat grasses, and sand sagebrush.[93] Species such as deer, badgers, prairie dogs, bald eagles, hawks and bison have been reintroduced to the site or, in the case of some birds, migrated there.

On the other hand, historical fidelity conflicts with the interest in leaving in place certain exotic species of plants that will serve to deter prairie dogs from moving into areas yet to be decontaminated.[94] Furthermore, the prairie will not be restored everywhere in order to continue to support a more diverse variety of species that has developed over time due to human intrusions onto the landscape.[95]

By focusing on narrative continuity and the importance of place, we can better understand why the public is concerned with obscuring the true history of the RMA. It is important to recognize the past and our connections with it. We can experience the place of the RMA Refuge as a unique decision to return the land to wildlife supporting habitat.

C. Identifying Root Causes and Addressing Sources of Degradation.

Restoration of damaged environments often results in improved ecosystems and beneficial wildlife habitat. Many restorations involve human intervention to undo harm. But the expectation that restoration will encourage a deeper environmental ethic requires analyzing whether the harm that needed to be "undone" by the restoration is likely to re-occur. In other words, will further restoration be required at the site in the future because people will continue to take actions leading to environmental degradation?[96] In a critique of restoration practice,

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[92] ERIC HIGGS, NATURE BY DESIGN: PEOPLE, NATURAL PROCESS, AND ECOLOGICAL RESTORATION 158 (2003).

[93] Cohn, *supra* note 80 at 277.

[94] *Id.* Crested wheatgrass would be maintained in areas surrounding former contaminated sites prior to remediation. Because this grass grows 2-3 feet in height, prairie dogs cannot see over it and are reluctant to move into that area. *Id.*

[95] *Id.*

[96] For an in depth look at ecosystem restoration through five complex case studies, including examination of successes and set-backs over time, *see* MARY DOYLE AND CYNTHIA A. DREW, LARGE-SCALE ECOSYSTEM RESTORATION (2008) (parenthetical needed). Related to this challenge is where restorations fail to

Professor Alyson Flournoy has argued that identifying the reasons for environmental degradation is a foundational, yet often overlooked step in a successful restoration.[97]

Whether the RMA Refuge restoration meets this benchmark requires looking at it from both a broad and narrow view. Broadly speaking, the key legal provision driving this restoration is CERCLA. The adoption of CERCLA itself, with provisions allowing restoration or acquiring the equivalent of natural resources that have been damaged certainly speaks of recognition that past hazardous waste practices were insufficiently protective of the environment. CERCLA is now driving cleanups at many sites that were former military installations. Congress could have designed the law to exclude these sites. Instead, Congress adopted specific provisions to address federal facilities and CERCLA's broad remedial goals are implemented at military sites as well as private property.

On the other hand, if one looks narrowly at the situation, because the RMA Refuge is a former military site, all the root causes that can be addressed are not being impacted. If one key piece of a successful restoration is its capacity to identify and exert pressure to prevent future environmental impacts, the RMA is not likely to fare well in a narrow view. This narrower view requires that we look at the intersection of military policy and environmental laws, which do not have such a harmonious interplay.

First, as a federal facility cleanup, the cleanup project has been significantly hampered by the U.S. Army's insistence that its objectives and prerogatives are of more weight than any others. It is this concern about adequate oversight by the EPA of the U.S. Army that led the 10th Circuit to rule in favor of State involvement in enforcement of hazardous waste laws in *U.S. v. State of Colorado*.[98] Moreover, given the history of less than aggressive cleanup objectives, the 10th Circuit's reasoning in that case has been vindicated in the RMA Refuge story. By this view, military policy looks more broadly at securing the people from outside aggressors, although those efforts may at times be at odds with sustainable environmental actions.

The 2008 Supreme Court decision in *Winter v. Natural Resources Defense Council* points to a lack of precautionary approach to military operations that may significantly impact the

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take into consideration all inputs. For example, shallow lake restorations have been particularly problematic. For a discussion of the restoration of Lake Apopka and need for adaptive management in restoration projects, *see* Mary Jane Angelo, *Stumbling Toward Success: A Story of Adaptive Law and Ecosystem Resilience*, 87 NEB. L. REV. 950 (2009).

[97] Flournoy, *supra* note 66, at 192.

[98] *United States v. Colorado*, 990 F.2d 1565 (10th Cir. 1993), *cert. denied*, 510 U.S. 1092 (1994).

environment.[99] In *Winter*, petitioners challenged as inadequate the Environmental Assessment (EA) prepared by the Navy in 2007 for training to be conducted off the coast of California in the Pacific Ocean. The lower court issued an injunction against the training operations, pending evaluation of the substantive claims. The Supreme Court ruled that the lower court did not properly defer to the military's interest in training operations involving sonar for national security.[100] While the substantive issues still lacked resolution, an injunction would have prevented harms that have been proven to occur to whales due to sonar submarine training events. The court's balancing approach in weighing military and environmental needs lacks foresight. It fails to prevent the need for future actions to undo environmental harm.

Some have sought to cast the story of *Winter* in a more positive light, arguing that the Navy had conceded that its activities would cause harm and that it would make certain efforts to reduce those harms. But ultimately, the military's goal is national security. The tradeoffs are balanced in a way that other important goals, such as environmental protection, may have to give way to that ultimate objective. To parallel the RMA Refuge, it would be difficult to predict how or to what extent the cache of weapons produced by the arsenal supported our national security. It is sufficient to say that, on the whole, national security tends to get the upper hand when conflict with environmental policy is inevitable.[101]

Unfortunately, we have a propensity to deceive ourselves about the effectiveness of restoration or technological fixes, and in turn this deception facilitates continued destruction of the environment.[102] The deception runs beyond overestimating our capacity to re-create natural processes, but also in the capacity for restoration to foster environmentalism.[103] This benchmark of

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[99] 555 U.S. 7 (2008); *see also* Alicia Schaffner, *National Security vs. The Whales: The Navy and The Natural Resource Defense Council Battle Their Way to the Supreme Court*, 1 SEA GRANT L. & POL'Y J. 82 (2008) (parenthetical needed).

[100] Winter, 555 U.S. at 26-27 (2008) (finding that the "balance of the equities and consideration of the overall public interest in this case tip strongly in favor of the Navy").

[101] The Supreme Court noted in *Winter* that "[o]f course, military interests do not always trump other considerations, and we have not held that they do. In this case, however, the proper determination of where the public interest lies does not strike us as a close question." Winter, 555 U.S. at 26 (2008).

[102] For a full discussion of this tendency *see* William H. Rodgers, Jr., *The Myth of the Win-Win, Misdiagnosis in the Business of Reassembling Nature*, 42 ARIZ. L. REV. 297 (2000). In this essay Professor Rogers argues that we have caused a great deal of harm to nature under the mistaken belief of a "win-win" solution. *Id.* at 306

[103] Richard Cowell, *Stretching the Limits: Environmental Compensation, Habitat Creation and Sustainable Development*, *in* 22 TRANSACTIONS OF THE INSTITUTE OF BRITISH GEOGRAPHERS 292 (1997). When challenging the

restoration is designed to question whether we have put the cart before the horse—is the restoration being driven by our environmental harms or by an interest in correcting what we have accepted are past mistakes.

D. Public Engagement: Connecting with the Public and Encouraging Environmentalism.

Some restorations will spring from grassroots organizations, interested in improving their natural surroundings and thus have an automatic constituency. Other restorations, such as the RMA Refuge restoration, are mandated by legal requirements in response to development or pollution events. Engaging the public with restoration work such as this would include an important group of stakeholders. In fact, those legal requirements have designed public input pathways, often enhancing transparency and thus legitimacy in a democratic society, serving as a supplement to the values and objectives advanced by government and the private interests represented, and boosting enforcement effectiveness.[104] Moreover, if restoration is to achieve the goals of educating and building community, ultimately to the extent of the larger goal scholar William Jordan III, author of *The Sunflower Forest* identifies as "learning to live graciously on this planet",[105] then public engagement is an important feature of restoration work.

The story of public engagement in the RMA Refuge restoration is still being written. Leading up to adoption of the ROD, the public was very engaged in providing comments to reports and proposals the Army presented. The Army held public meetings, produced videos and other literature to inform the public about the development of cleanup objectives.[106] A RMA Advisory Board (RAB) and a Site Specific Advisory Board (SSAB) were formed to help disseminate information to the public about

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process of restoration as insufficiently abiding tenets of sustainable development, Richard Cowell identifies over-reliance on our ability to re-create natural capital as insufficiently precautionary. If restoration actually instilled values such as restraint, favoring resilience, etc. that ultimately benefited the environment then these can be carried forward toward increased environmental protection in policy and individual actions. *Id*. at 294-95.

[104] *See* Eileen Gauna, *The Environmental Justice Misfit: Public Participation and the Paradigm Paradox*, 17 STANFORD ENVTL. L. J. 3, 17-31 (1998) (analyzing different forms of citizen engagement in environmental decision-making and each model's underlying rationales).

[105] WILLIAM JORDAN III, THE SUNFLOWER FOREST: ECOLOGICAL RESTORATION AND THE NEW COMMUNION WITH NATURE 6 (2003).

[106] The ROD at Section 12 details the various methods of public outreach, including a history of the "community relations activities" at 12.2, and extensive record of the response to public comments in section 12.3. ROD, *supra* note 37, at §§ 12.2, 12.3.

the cleanup and receive public comment and input on the cleanup process that would follow adoption of the ROD. Because of the nature of this restoration, the public could be significantly involved by providing comments, but could not take part in the work to transform the refuge from hazardous waste site to natural habitat. Some in the community expressed their unhappiness that the soil remediation was not more robust.[107]Others cited the limits to growth that would be required because contaminated groundwater could not serve as a potential water supply. Nonetheless, there are many people in the community that embrace the refuge as a community asset capable of informing and educating others about the natural environment and the need for conservation. Such a result illustrates that it is not only hands-on work that engages the community to appreciate the restored landscape, but also outreach, sharing ideas, and planning for the future. Response to public surveys regarding Army efforts indicated more attention and explanation of how public comments were incorporated into the decision-making process was needed. Another important theme that emerged was the need to educate people about the history of the arsenal and the immensity of the transformation.

On a very basic level there is a tension between burying the past and shining a light on past failures. The hazardous materials threatening human and wildlife are literally buried on site. Some members of the public that have stayed involved in the cleanup process have on numerous occasions charged the RVO with breaching the public trust by hiding the truth or seeking to obscure the history of the arsenal. In the July 2007 Citizen Report, the Site Specific Advisory Board (SSAB) used several items as the basis for its argument that the Army and Shell had contempt for the public. Illustrative of the conflict over characterizing the site is an incident involving signage and marketing of the RMA Refuge. In 1998 the SSAB raised several issues with the National EPA Ombudsman. One complaint was that there were inadequate warnings that the site was the location of an ongoing CERCLA cleanup and previous military arsenal. The term "Arsenal" had been dropped from signage, identifying the wildlife refuge as simply the Rocky Mountain National Wildlife Refuge. The SSAB was concerned that this obscured the true nature of the site as a hazardous waste site and was purposefully done to minimize public awareness of the contamination and history of the site. Although the SSAB demanded that the Army and Shell use different signage, their request was not honored. Ultimately, the SSAB appealed to the Deputy Assistant Secretary of the Army at

[107] ROD, *supra* note 37, at § 10.2.2, (noting that while comments received from the public indicated the remedy as an acceptable approach to "reduce risks at a reasonable cost" there were some comments that expressed that the remedy should include additional soil treatment).

the Pentagon who required that warning signs be placed at the entrance and the term "Arsenal" be included in the title. In response to the discovery of the sarin gas bomblet in October of 2000, as previously discussed, the SSAB characterized the RMA Refuge quite differently:

The Rocky Mountain Arsenal (Hazardous Waste) National Wildlife Refuge was now affectionately referred to as the **Saringhetti**, which stayed close to the public, along with the RMA, for almost two years.[108]

Indeed, the SSAB identifies a silver lining to the discovery of deadly sarin gas and the dispute between the Army and the State of Colorado over how to safely dispose of it. In the 2000-2005 review, the SSAB suggests that the episode destroyed "the propagandized illusion that the 'clean-up' at RMA was complete and that the public was safe when they visited the Rocky Mountain Arsenal (Hazardous Waste) National Wildlife Refuge."[109]

The refusal of the Army and Shell to conduct sampling for dioxin was another unfortunate public relations challenge.[110] The SSAB requested that the soil be tested for dioxin as early as 1992. By the time the ROD was final, the state was conducting samples for dioxin. The EPA eventually conducted the testing, and released a report in 2000 detailing the areas contaminated by dioxin. The SSAB praised the EPA's work, but condemned the inaction of the Army and Shell, pointing to their steadfast refusal to initiate additional site characterization. Another point of contention involves the Army and Shell's petition to increase the amount of Diisopropyl Methylphosphonate (DIMP) that can be released to groundwater.[111] DIMP is a chemical by-product of sarin, created during manufacture or detoxification.[112] The EPA's allowable standard for DIMP is 600 ppb, while that of the State of Colorado is 8ppb. Although the Army and Shell contend that there are no further health impacts associated with the higher allowable discharge level because the residents in the vicinity of the plume

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[108] RMA Site-Specific Advisory Board, Citizen Report Re: Rocky Mountain Arsenal "Clean-up" 2000-2005 Five Year Review, July 16, 2007 at 8.

[109] *Id*. The SSAB do not consider the actions at the RMA Refuge a cleanup because there will continue to be contamination of the site following the selected remedy. Therefore, the SSAB consistently identifies the term cleanup in quotations. *Id*. at 1.

[110] *Id*. at 5.

[111] Department of the Army, Rocky Mountain Arsenal, "Final 2005 Five-Year Review Report for Rocky Mountain Arsenal, Commerce City, Adams County, Colorado," Review Period: April 1, 2000-March 31, 2005, Volume I of III, (November 2007).

[112] AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH AND HUM. SERVICES, CAS NO. 1444-75-6, PUBLIC HEALTH STATEMENT: DIISOPROPYL METHYLPHOSPHONATE (1998), http://www.atsdr.cdc.gov/ToxProfiles/tp119-c1-b.pdf.

have been connected to an alternative supply of water, it presents a perception that the Army is interested in doing less than necessary to protect the public. Though these incidents detail bumps in a long road, erosion of trust and the persistence of suspicion is easier to understand with them in mind.

While it may not be possible to bring the public in on the restoration work occurring physically on the site, it is clear that merely having an exchange with the public is insufficient to ensure the success of the restoration.[113] Emphasis on image control can thwart grassroots support for the project. While groundwork encouraging engagement and public support for the project ideally should have been conducted prior to the restoration, it is never too late to engage the community in the work at the refuge. This includes all the glamorous parts as well as the "dirty" ones.

Although the community may not have chosen a wildlife refuge if it was put to a referendum, the refuge still has the potential to serve as a beloved community asset. Community advisors demand transparency and a commitment to a different mode of operation. It is not such a tall order for the RVO; it can do more than talk the talk—it can walk the walk. For example, the recycling efforts at the refuge are designed to contribute to "a culture of conservation" and earned the arsenal an award for the Business Recycler of the Year.[114] A U.S. Army official recently noted that the arsenal "will be an educational resource that illustrates what we can accomplish when we commit to restoring and conserving our environment."[115] Ultimately, that is what each restoration is hoping to accomplish.

V. CONCLUSION

The RMA Refuge will certainly achieve the objective of becoming a most unique wildlife refuge. And if the vision of a broader regional habitat corridor comes to pass, it will be an important success story for wildlife in the area threatened with ever diminishing habitat. Achieving more in this faux nature project—such as increased environmentalism, infusion of an environmental ethic—requires communicating both the successes and limitations of the arsenal restoration to the community it is meant to serve.

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[113] That the typical public processes used in the regulatory arena often fail to achieve environmental justice has been well documented, *see, e.g.* Gauna, *supra* note 104.

[114] Press Release, Jennifer Watson, Rocky Mountain Arsenal Public Affairs Office, Rocky Mountain Restoration (Feb. 19, 2009), http://waste360.com/Recycling_And_Processing/recycling-trends-rocky-mountain-arsenal-restoration-200902.

[115] *Id*.

For one, the connection between restoration and environmentalism is not automatic. Grassroots support and individual engagement is central. The distrust of "marquee" restoration projects identified by environmental ethicists is well-placed, because of the tendency to emphasize the positive without regard to either the limitations of law and policy that lead to degradation or the limits of feasibility when re-constructing nature. For these reasons we should scale back our expectations for restoration. We must approach the ethical questions presented by the tension between biological integrity and historical fidelity. The restoration process involves myriad decisions ultimately designed to achieve human objectives. Restorations are about choice. Thus, the people who will live with the refuge as a neighbor must be convinced of its value to both wildlife and people. Without this, the opportunity to weave together humans and their environment is squandered; the optimism of restoration assisting in a more enthusiastic land ethic dispersed throughout society will begin to fade.

Not every restoration will result in invigorated environmentalism. Restorations can educate. Restorations can inspire. They can communicate the limits of our ingenuity, and in turn give support to precautionary measures for limiting environmental harm. To do so the past cannot be buried. Failures cannot be hidden. Success and failures side by side must be used to encourage future generations to learn from our mistakes. The RMA Refuge can do this, with native vegetation, bald eagles and bison on the one hand, and the continued contamination of groundwater for hundreds of years on the other. The choice of the former rather than the latter is the heart and hope of restoration practice; the cost-benefit balance that demands the latter is the lesson for precaution as we continue the transformation of our landscapes.